

CLAIMS

1. A hybridization probe in which a nucleotide sequence comprising labeled nucleotides or nucleotide derivatives is added 5 to a DNA to be labeled, the added nucleotide sequence
 - a) comprising nucleotides and/or nucleotide derivatives having weaker affinity of hydrogen bonding in base pairing with bases of the target nucleotide sequence when compared with those of hydrogen bonding in an a/t pair, in an a/u pair, and in a g/c pair; and
 - 10 b) being introduced into the DNA to be labeled through nucleotide-adding reaction with terminal transferase.
2. The hybridization probe of claim 1, wherein the nucleotides of a) are inosinic acids.
3. The hybridization probe of claim 2, wherein the added 15 nucleotide sequence comprises labeled nucleotides or nucleotide derivatives and unlabeled inosinic acids or derivatives thereof.
4. The hybridization probe of claim 3, wherein the labeled nucleotides or nucleotide derivatives are labeled inosinic acids or inosinic acid derivatives.
- 20 5. The hybridization probe of claim 1, wherein the added nucleotide sequence *per se* is incapable of hybridizing to any nucleotide sequences under stringent hybridization conditions for the DNA to be labeled.
6. A method for detecting, with the hybridization probe of 25 any one of claims 1 to 5, a nucleic acid having a nucleotide sequence complementary to the DNA to be labeled.
7. The method of claim 6, wherein RNA or cDNA library is to be detected.
8. A method for labeling a DNA by 3'-tailing with terminal 30 transferase, wherein nucleotides and/or nucleotide derivatives having weaker affinity of hydrogen bonding in base pairing when compared with those of hydrogen bonding in an a/t pair, in an a/u pair, and in a g/c pair and which can be substrates in nucleotide-adding reaction with terminal transferase are used as 35 substrates.
9. The method of claim 8, wherein the nucleotide is

deoxyinosine 5'-triphosphate.

10. The method of claim 8, wherein the nucleotides and/or nucleotide derivatives having weaker affinity in base pairing are mixed with labeled nucleotides or nucleotide derivatives and used 5 as the substrates.

11. A kit for synthesizing a hybridization probe, the kit comprising

i) nucleotides and/or nucleotide derivatives

(a) having weaker affinity of hydrogen bonding in base pairing 10 with bases of the target nucleotide sequence when compared with those of hydrogen bonding in an a/t pair, in an a/u pair, and in a g/c pair; and

(b) being introduced into a DNA to be labeled through nucleotide-adding reaction with terminal transferase;

15 ii) labeled nucleotides or nucleotide derivatives; and
iii) terminal transferase.

12. A method for preventing hybridization of a hybridization probe in which a nucleotide sequence comprising labeled nucleotides is added to a DNA to be labeled, the hybridization non-specific to 20 the sequence of the DNA to be labeled, wherein the nucleotides and/or nucleotide derivatives having weaker affinity of hydrogen bonding in base pairing when compared with those of hydrogen bonding in an a/t pair, in an a/u pair, and in a g/c pair are inserted into the added nucleotide sequence.